

**CALOREZIA, A NEW GENUS OF TRIBE NASSAUVIEAE
(ASTERACEAE, MUTISIOIDEAE)**

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ABSTRACT

Results from molecular phylogenetic studies of tribe Nassauvieae based on chloroplast DNA coding regions show that the genus *Perezia* is not monophyletic. Based on these studies, *Perezia nutans* is herein recognized as the type of the new genus *Calorezia*. *Calorezia* is described and its phylogenetic relationships discussed. *Perezia prenanthoides*, a taxon morphologically similar to *P. nutans*, is also transferred to *Calorezia*.

KEY WORDS: Asteraceae, Mutisioideae, Nassauvieae, *Calorezia*, *Calopappus*, *Perezia*

Tribe Nassauvieae contains approximately 24 genera and 370 species of annual or perennial herbs and shrubs. With the exception of the genus *Acourtia* and some species of *Trixis*, the species of Nassauvieae are endemic to South America. *Trixis* and *Acourtia* are the largest genera of the tribe. The tribe, for the most part, can be separated from other composites by its capitula with bilabiate corollas and styles with truncate to rounded penicillate style branches, as well as by pollen morphology (Crisci, 1974).

Molecular phylogenetic studies of tribe Mutisieae s. l. by Kim et al. (2002) based on chloroplast *ndhF* showed that *Perezia* is sister to *Nassauvia* and *Triptilion*. Further studies, aimed at elucidating the relationships of tribe Nassauvieae (Panero et al., in prep.) and sampling multiple coding loci and additional taxa, reveal that *Perezia* is not monophyletic as *Perezia nutans* is sister to *Calopappus*, *Nassauvia* and *Triptilion* and not to other species of *Perezia* including its type *P. magellanica* (L.f.) Less. To maintain a taxonomy that only recognizes

monophyletic groups, I propose the removal of *P. nutans* from *Perezia* as the type of the new genus *Calorezia*. *Perezia prenanthoides*, a taxon morphologically similar to *P. nutans* (Vuilleumier, 1970) is herein transferred to *Calorezia* as well.

Calorezia Panero gen. nov. TYPE: *Calorezia nutans* (Less.) Panero

Genus tribi Nassauvieae Pereziae similis sed differt cypselis trichomatibus binatis gradatim protractis, foliis amplis runcinatis, et capitulis aliquando nutantibus.

Perennial herbs. Leaves mostly basal on short internodes forming a rosette, blades oval in outline, deeply runcinate. Capitula epaleate, turbinate. Corollas bilabiate (3+2), pink-purple, essentially glabrous. Anthers blue, shallowly calcarate, tailed, appendages strongly sclerified approximately $\frac{1}{2}$ the size of the thecae. Styles white, nectary disc-shaped, style glabrous, style branches rounded to truncate with continuous stigmatic surfaces, minutely pappillose on abaxial surface. Cypselae tubular to turbinate, shallowly ridged, sparsely to moderately pubescent, twin trichomes short, narrowly deltoid, tapered, both cells of equivalent length, glandular trichomes composed of two rows of cells of equivalent width and length, apical pair of cells conspicuously enlarged. Pappus of multiple, persistent, flattened bristles in 2 rows.

The name *Calorezia* is derived from a combination of the names *Calopappus* and *Perezia*. The name also alludes to the beauty of these plants.

Calorezia nutans (Less.) Panero, comb. nov. *Perezia nutans* Less. Synop. Comp. 409. 1832.

Calorezia prenanthoides (Less.) Panero comb. nov. *Perezia prenanthoides* Less. Synop. Comp. 409. 1832

Key to the genera of the *Perezia* clade.

For a key to all genera of tribe Nassauvieae see Vuilleumier (1970) or Crisci (1974). A recent key for all genera of Mutisieae s.l. can be found in Hind (2007).

1. Capitula with 5 or fewer florets.....(2)
 1. Capitula with more than 5 florets.....(4)
2. Cypselae with a pappus of 3, rarely 4 scales.....*Triptilion*
 2. Cypselae with a pappus of more than 4 bristles or scales....(3)
3. Corollas white, sometimes suffused with pink.....*Nassauvia*
 3. Corollas yellow turning purple with age.....*Calopappus*
4. Apices of twin trichomes of cypselae, fused, tapered; glandular trichomes with two distinctive rows of cells of equivalent width and length and forming a straight line between adjacent cells as seen through light microscopy; capitula sometimes nodding; florets pink-mauve or purple; phyllaries narrowly lanceolate and usually without hyaline edges.....*Calorezia*
4. Apices of twin trichomes (when present) of cypselae shallowly to broadly divergent; glandular trichomes composed of one or two rows of cells, if of two rows of cells, the cells staggered and forming a sinuous line among the adjacent cells as seen through light microscopy, the terminal cell composed of one swollen cell; capitula never nodding; florets blue, white or yellow, rarely pink or purple, phyllaries mostly ovate, rarely narrowly lanceolate, with hyaline edges.....*Perezia*

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